

REMARKS

Claims 1 and 5 have been amended. Support can be found in the paragraph beginning at page 10, line 6, in Figs. 1, 2, and 4, and Claims 2 and 6, for example. Claims 2 and 6 have been canceled. Claims 9 and 10 have been added. Support can be found in Figs. 1 and 4, for example. No new matter has been added. Applicant respectfully requests entry of the amendments and reconsideration of the present application in view of the amendments and the following remarks.

Rejection of Claims 1, 2, 5, and 6 Under 35 U.S.C. § 102

Claims 1-2 and 5-6 have been rejected under 35 U.S.C. 102(b) as being anticipated by US 5,755,841 (Boucot). Applicant respectfully traverses the rejection. Claims 1 and 5 are independent. Claims 2 and 6 have been canceled.

Claim 1 recites: (I) the oxidizing agent feed pipe is disposed coaxially with the vessel, and (II) the carbon-containing gaseous raw material feed pipe and the oxidizing agent feed pipe axially intersect with each other at an angle of 80 to 100° upstream of the catalyst layer. These structures can inhibit formation of a high temperature area in an inner wall of the vessel caused by the flow of high temperature partial oxidation reaction gas, and thus, high temperature corrosion at an inner wall of the vessel can effectively be inhibited.

In contrast, in Boucot, the oxidizing agent feed pipe (3) is angled with respect to the axis of the vessel, so that an inner wall where the flow of the oxidizing agent hit is likely to form a high temperature area, thereby causing high temperature corrosion.

Thus, Boucot could not anticipate Claim 1. Claim 5 recites similar limitations and thus, for the above reasons, Boucot also could not anticipate Claim 5. Applicant respectfully requests withdrawal of this rejection.

Rejection of Claim 4 Under 35 U.S.C. § 102 or § 103

Claim 4 has been rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Boucot. Applicant respectfully traverses this rejection. Claim 4 depends from Claim 1, which could not be anticipated by Boucot. Also, as discussed above, Boucot does not teach or even suggest the features (I) or (II).

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Since these features are in no way taught or suggested by Boucot, neither Claim 1 nor 4 could be obvious over Boucot. Applicant respectfully requests withdrawal of this rejection.

Rejection of Claims 3 and 7-8 Under 35 U.S.C. § 102 or § 103

Claims 3 and 7-8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Boucot. Applicant respectfully traverses this rejection. These claims depend from Claim 1 or 5.

As discussed above, Boucot does not teach or even suggest the features (I) or (II). Since these features are in no way taught or suggested by Boucot, none of Claims 1, 3, 5, and 7-8 could not be obvious over Boucot. Applicant respectfully requests withdrawal of this rejection.

New Claims

Claims 9 and 10 have been added. These claims depend from Claims 1 and 5, respectively, and at least for this reason, these claims could not be obvious over Boucot. Additionally, these claims further recite that no oxidizing agent or carbon-containing gaseous raw material other than those recited in Claims 1 or 5 is fed into the vessel. That is, no oxidizing agent or carbon-containing gaseous raw material is fed directly into the catalyst layer. By doing this, the particle oxidation reaction and the steam-reforming can be separately carried out in sequence, thereby effectively stabilizing the flow of the gases, promoting excellent mixing of the gases, and inhibiting high temperature corrosion and melting of the catalyst. In Boucot, the oxidizing agent (6) and the carbon-containing gaseous raw material (7) are fed into the catalyst. For the above additional reason, Boucot could not render Claims 9 and 10 obvious.

CONCLUSION


In light of the Applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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